

**REMARKS**

This is a full and complete response to the Office action dated November 22, 2006.

All comments and remarks of record are herein incorporated by reference. Applicants respectfully traverse these rejections and all comments made in the Office action. Nevertheless, in an effort to expedite prosecution, Applicants provide the following remarks regarding the cited references.

**DISPOSITION OF CLAIMS**

Claims 30-32 are pending in the present application and have been amended for clarification. New claims 36 and 37 are added with support found generally in claim 30. No new matter is added.

**REJECTION UNDER 35 USC §112**

Claims 30-32 stand rejected under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the invention. Applicants respectfully traverse this rejection.

The Examiner alleged that the use of the *S. cerevisiae* sequence (SEQ ID NOs:1 and 2) are fully described in the application, but, however, the specification fails to provide any additional representative species of the claimed genus to show that the Applicant was in full possession of the claimed genus. The Examiner further alleged, citing the *Lilly* case that no relationship between the disclosed species and the structures of the other proposed species is described, and that no common characteristics, other than enzyme function are required by the claims. See *University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 43 USPQ.2d 1398.

Finally, in the most recent Office Action, the Examiner alleged that the instant claims read on fragments and variants of the claimed sequences based on the language “a

nucleotide encoding SEQ ID NO:2” as this is read as “any nucleotide or portion there.” Applicants respectfully disagree.

Applicants have amended claims 30-32 for clarification to now recite “nucleotide sequence SEQ ID NO: 1 from *S. cerevisiae* or a nucleotide sequence 95% identical to SEQ ID NO:1 wherein the respective nucleotide sequences encode SEQ ID NO:2.” Applicants respectfully assert that the amended claims are clearly not so broad as to read on merely any nucleotide or portion thereof which result in SEQ ID NO:2 as suggested by the Examiner. The instant claims recite nucleotide sequence SEQ ID NO 1 or nucleotide sequence 95% identical to SEQ ID NO: 1 encoding SEQ ID NO:2, which are clearly supported in the Application.

The Examiner has stated in the Office action that the Application fully describes the use of the *S. cerevisiae* sequence (SEQ ID NOs: 1 and 2). *See Office action* of November 22, 2006, page 4. Applicants therefore respectfully assert that this species is sufficient to show that the Applicants had possession of the instant claimed invention at the time of filing.

Applicants respectfully note that with respect to *Lilly*, no sequence information regarding the human cDNA, which was the subject of the claims, appeared in the entire patent. *See Lilly*, 119 F.3d 1559, 1567. However, in the case at hand, Applicants recite in the claims and provide in the application nucleotide SEQ ID NO’s 1 and 2. Furthermore Applicants provide in the Application information such as the function of the PDAT and general nucleotide isolation techniques. Applicants respectfully assert that such disclosure meets the written description requirement.

Moreover, in *Capon*, a more recent Federal Circuit opinion, Applicants respectfully submit that the court held that the sequence of the chimeric gene, which was the focus of the patent at issue, did not even need to be recited in the application. *See Capon v. Eshhar*, 418 F.3d 1349, 1358, 76 USPQ.2d 1078. This was because one of skill in the art would have known the DNA sequences at issue. *See Id.* Therefore, as each field evolves, the balance also evolves between what is known and what is added by each inventive contribution. *See Id.* Therefore, as the state of the art progresses, one of skill in the art would have greater knowledge of biological processes and methods and thus

what is required for the written description evolves as well. Applicants respectfully submit that they have provided more than is required to meet such written description requirement.

In light of the foregoing, Applicants respectfully assert that the claimed invention is described in the Application in such a way as to reasonably convey to one skilled in the art that the inventor, at the time of filing, had possession of the claimed invention. Accordingly, Applicants respectfully request that the 35 USC §112, 1<sup>st</sup> paragraph rejection be withdrawn.

#### REJECTION UNDER 35 USC §112 - ENABLEMENT

Claims 30-32 stand rejected under 35 USC §112, first paragraph, for lack of enablement. Applicants respectfully traverse this rejection.

The Examiner argues that although the specification is enabling for methods of making triacylglycerol (TAG) using a host organism transformed with a gene encoding PDAT from *S. cerevisiae* (SEQ ID NO:1), it is not enabling for methods using any gene encoding any PDAT from any source absent any structural limitations. *See Office action*, November 22, 2006, page 5.

Applicants respectfully submit that amended claims 30-32 now recite “a nucleotide sequence SEQ ID NO:1 from *S. cerevisiae* or a nucleotide sequence 95% identical to SEQ ID NO:1 wherein the respective nucleotide sequences encode SEQ ID NO:2.” As Examiner states that the specification is enabling for making TAG using a gene encoding PDAT from *S. cerevisiae*. Applicants respectfully assert that the instant claims satisfy the enablement requirement. As the instant claims recite a nucleotide sequence of SEQ ID NO:1 or a nucleotide sequence 95% identical to SEQ ID NO:1 which encodes SEQ ID NO:2, Applicants respectfully assert that the instant claim should not be read as meaning “any nucleotide or portion thereof” as suggested by the Examiner. *See Office action*, November 22, 2006, page 9. The nucleotide sequences in the instant claims are clearly specified so that undue experimentation would not be required by one of ordinary skill in the art. Therefore, Applicants respectfully assert that the instant claims therefore satisfy the enablement requirement.

The Examiner also alleged that the claims are not enabled because it would take undue experimentation to make some cells that produce TAG with uncommon fatty acids. The Examiner argues that the specification provides no guidance or working examples for producing uncommon fatty acids in the absence of uncommon fatty acid genes (either endogenous or exogenous). *See Office action*, November 22, 2006, page 7.

Applicants respectfully assert that the uncommon fatty acids are not produced *de novo*. The PDAT enzyme catalyzes the transfer of uncommon fatty acids from phospholipids to diacylglycerol resulting in an accumulation and increase of triacylglycerol with uncommon fatty acids. *See Application*, page 9, lines 7-13.

Furthermore, the Applicants wish to note to the Examiner that transformed *Arabidopsis thaliana* seeds with the yeast PDAT gene were tested as provided on pages 21-22 of the Application. Applicants respectfully submit that the total fatty acids per mg of second generation (T2) seeds pooled from individual transformed *Arabidopsis thaliana* plants show a statistically (in a mean difference two-sided test) a higher oil content than seeds from T2 plants transformed with an empty vector.

Applicants respectfully assert that one of skill in the art is by all means able to introduce the gene according to the claim in a plant by general methods of plant transformation or particularly by the method disclosed on pages 21-22. Therefore, one of ordinary skill in the art can carry out the claimed invention without undue experimentation.

In light of the foregoing, Applicants respectfully request that the above 35 USC §112, 1<sup>st</sup> paragraph rejection be withdrawn.

REJECTION UNDER 35 USC §112, 2<sup>ND</sup> PARAGRAPH

Claims 30-32 stand rejected under 35 USC §112, second paragraph, as failing to set forth subject matter which Applicants regard as their invention. Applicants respectfully traverse this rejection.

The Examiner alleged that claim 30 remains indefinite because the claims still recite “nucleotide” and “DNA” together. Applicants have adopted the Examiner’s

suggestion to recite "nucleotide" only in the claims, and have amended the claims accordingly. Favorable action is solicited.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner is invited to directly contact the undersigned by phone to further the discussion.

REQUEST FOR EXTENSION OF TIME:

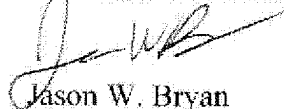
It is respectfully requested that a two month extension of time be granted in this case. The respective \$450.00 fee is paid by credit card (Form PTO-2038 enclosed).

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437.

**Conclusion**

Having addressed all issues set out in the Office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,  
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